

Addendum to Statement

Response to specific questions asked by the Railroads Subcommittee of the Committee of Transportation and Infrastructure, US House of Representatives in its May 4, 2005 letter addressed to Francis Jelensperger.

What is the Northeast Corridor Maintenance Services Co. (NeCMSC) role in maintaining the Acela fleet?

The Northeast Corridor Maintenance Service Company (NeCMSC) is jointly owned and operated by Bombardier and ALSTOM (50-50 Joint Venture Company) and is in charge of the maintenance of Acela trains until October 1, 2006 (started in 2000). NeCMSC manages, oversees and directs the maintenance operations of the Acela trains that are carried out by Amtrak's unionized labor force.

What is ALSTOM's relationship to NeCMSC?

The Northeast Corridor Maintenance Service Company (NeCMSC) is jointly owned and operated by ALSTOM and Bombardier (50-50 JV)

As part of the settlement between Bombardier-Alstom and Amtrak in March 2004, it was agreed that maintenance services be transitioned to Amtrak's own in-house resources by October 1, 2006. The Bombardier-Alstom Consortium is in the process of transitioning maintenance operations back to Amtrak. For example, the Consortium will offer training to employees to secure a seamless transition. The Consortium will also continue to support Amtrak after October 1, 2006 as a supplier of parts and of technical services, if needed.

When did NeCMSC first become aware that 20-30% of the brakes on the Acela fleet had cracks?

This issue surfaced when a visual inspection discovered hairline fissures in brake disc spokes on Acela Express coaches during a FRA routine inspection on the evening of April 14. Following this discovery, the entire fleet underwent a visual inspection during the next day, a process that identified approximately 300 discs having the issue from a total of 1,440 discs in the fleet. Based on additional sample inspections using specialised equipment and processes we estimate that a large percentage of the disc exhibit some degree of hairline fissures.

What procedures did NeCMSC have in place that could have detected the problem before such a large percentage of the Acela fleet was affected?

It is important to understand that the Acela trainsets undergo daily inspections by NeCMSC as part of a routine maintenance program that is in line with standard industry practices and the disc brakes are included in this daily regimen. The 20 trainsets also undergo in-depth inspections and maintenance at 92-day and one-year intervals. To give you an idea of the rigor, the inspection at the 92-day interval is carried out over a week. The inspection at the one-year interval lasts two weeks. As a

result, the brake discs had been inspected by teams from our maintenance operation, the FRA and Amtrak multiple times prior to the first discovery of the fissures in April.

It is unfortunate that the inspections did not detect the hairline fissures earlier. These defects are small and difficult to detect with the naked eye, particularly when the discs are cool and the metal is in a contracted state.

Most of the hairline fissures are not visible at all to the naked eye. Following the visual inspection process, our teams implemented a Magnetic Particle Inspection. The MPI process uses electro-magnetic equipment to detect surface and near-surface flaws in ferromagnetic material. In a nutshell, it helps us see anomalies not visible with the human eye. This is a detailed process, so we used it on a sample of the Acela brake discs in question. Based on the MPI results, we estimate that a large percentage of the discs have some level of hairline fissures, indicating that the issue may be more prevalent than was originally believed.

NeCMSC was following industry maintenance practices with visual inspection performed on the brake discs on a daily basis. Standard industry practice is not to perform MPI as part of the normal daily inspections.

Having said this, the trainsets were grounded as a precautionary measure. The discs have operated for nearly five years without a failure and it is not clear how quickly the hairline fissures were propagating.

The discs were built to a specification provided by Amtrak that called for a minimum operating life equal to the lesser of five years or one million miles. Based on the average mileage travelled by the trainsets, the discs are at about the half-way point in that expected life cycle.

Hairline fissures on the spokes are actually in an area of the disc assembly away from where you would expect to see normal wear. In fact, wear on the disc face (or friction ring) – where the brake pads contact the disc when the brakes are applied – is as it should be at this point in the life cycle. The issue is in the spokes – an area where this sort of issue should not be occurring. It needs to be emphasized that the fissures on the spokes are in an area unrelated to the disc face that really determines the life cycle of the disc.

That points to a fundamental fault in the component, not excessive wear or lack of maintenance. In terms of normal wear on the brake disc face, these discs are performing exactly as they should. The point is that there was no way for the maintenance operation, the consortium or Amtrak to anticipate the type or magnitude of this fault.